(≥50yrs), herpes zoster (≥50yrs), and pertussis (≥18yrs) made up 51%, 30%, 16%, and 3% of the cost, respectively. Among those aged ≥50 years, influenza, pneumococcal disease, herpes zoster, and pertussis made up 31%, 44%, 24%, and 1% of the cost, respectively. Most (82%) pneumococcal costs stemmed from non-bacteremic pneumococcal pneumonia (NPP). Direct medical costs accounted for 91% of total pneumococcal burden, but only 27%, 28%, and 42% of total economic burden due to influenza, herpese zoster, and pertussis, respectively. Sensitivity analysis revealed that estimated influenza rates and costs per case, NPP incidence and directs costs, and herpes zoster incidence rates and indirect costs impacted the model most. **CONCLUSIONS:** Cost attributable to adult VPD in the United States is substantial. Broadening adult immunization efforts beyond influenza only may help reduce the economic burden of adult VPD, and a pneumococcal vaccination effort, primarily focused on reducing NPP, may be a logical place to start.

PIN43

A SYSTEMIC REVIEW: THE BURDEN OF TUBERCULOSIS IN ASIA

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OBJECTIVES: To determine the epidemiologic and economic burdens of tuberculosis (TB) in Asia. **METHODS:** A systematically review of primary studies in Asia was conducted. We searched MEDLINE, PUBMED, EMBASE, Science Direct, CNKI from January 1, 2000 to July 15, 2012; and websites of relevant countries and international organizations. **RESULTS:** TB prevalence, incidence and mortality in the region have declined since 1990 and status relate to the economy of the country. In 2010, there were 8.8 million incident cases of TB (128/100000 population). Most of the cases occurred in Asia (59%) and Africa (26%). India and China accounted for 40% of new and relapse TB cases. In 2006, TB caused India to lose a 23.7 billion US$. The mean direct cost was US$34.9 and mean indirect cost was $526.9. The total cost per patient was $562.7. In China, low income patients paid $149 to $724 for medical costs for a treatment course (42% to 119% of annual household income). In Philippines, the economic losses totaled PhP8 billion (US$145 million) and costs of treating all cases requires PhP475–1625 million (US$8–29 million) annually. In Cambodia, TB is the second largest cause of mortality. Monthly household costs were US$124/ patients ($135 for TB-HIV patients and $260 for resistant-TB patients); the average monthly income in Cambodia is $168. In Tajikistan, Patients and their households faced mean expenditures of US$ 396; (median US$ 282) related to a TB episode. **CONCLUSIONS:** Although most countries in Asia have done many efforts on TB control, the absolute number of patient is large that more efforts need to take to achieve the goal of 50% reduction in 2015 from 1990 set by WHO. More researches are recommended to study the economic burden in specific countries.

PIN44

COST OF OUTBREAK OF MENINGOCOCCAL DISEASE IN A COLOMBIAN CARIBBEAN CITY, 2012

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OBJECTIVES: To describe the cost of outbreak of meningococcal disease in Cartagena - Colombia. **METHODS:** The cost of meningococcal disease outbreak from February 21st thru March 21st2012, were described. The suspected cases were detected in the Children´s Hospital Napoleon Franco Pareja, House of the Child (HC) and they were reported to the Departamento Administrativo Distrital de Salud (DADIS, for acronym in Spanish). We ran an active surveillance program in the neighborhood cases. The investigation costs of the outbreak control, surveillance and health care cost were estimated. **RESULTS:** During meningococcal disease outbreak and following 1 month of active surveillance, a total of 6 cases were detected; from which one suspected case, one probable case and four were confirmed cases. The average patient age was 4.6 years. 50% of the cases died, 33% of the cases had meningitis, meningococcemia and myocarditis. 66% of the cases had culture specimen positive with *Neisseria meningitidis*. 5/6 cases (83%) had RT-PCR positive with *Neisseria meningitidis*. All *N. meningitidis*were serogroup B. 50 doses of ceftriaxone were administered as prophylaxis. DADIS did not recommend meningococcal vaccination and the proper vaccine was not available at the time. The costs of meningococcal outbreak were estimated as follows: Cost of control of the outbreak (US $ 735), disease surveillance phase (US $ 3,935) and health care cost was US $ 4.670. **CONCLUSIONS:** All cases were caused by *N. meningitidis* serogroup B. The absence of vaccination involves lower costs in control of the outbreak.

PIN45

COST AND HEALTH CARE RESOURCE USE OF PNEUMONIA IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

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OBJECTIVES: Patients with COPD are at increased risk for lung infections, such as pneumonia. However, few studies have evaluated the impact of pneumonia on health care resource utilization (HCRU) and cost in this population. The objective of this study is to estimate HCRU and cost in COPD patients with newly acquired pneumonia, compared to those without pneumonia. **METHODS:** A retrospective analysis using MarketScan® Commercial Claims and Encounters and Medicare Supplemental Databases was conducted. COPD patients with and without newly diagnosed pneumonia between January 1, 2005 and September 30, 2010 were identified. Propensity score matching was used to create a one-to-one matched cohort. Patient demographics, comorbidities measured by Charleston Comorbidity Index (CCI), and medication use were evaluated before and after matching. HCRU, including the number of hospitalizations, emergency room (ER), and outpatient visits, length of hospital stay (LOS), and associated health care costs were assessed during the 12-month follow up. Two-part models and gamma regression models were conducted to compare costs between groups after matching. **RESULTS:** In the baseline cohort of 520,008 patients, newly acquired pneumonia patients were older (mean age: 70 vs. 63 years) and sicker (CCI: 3.25 vs. 2.67). After matching, no baseline covariates were statistically different between groups. In the matched cohort of 168,260 patients, one-year mean HCRU after pneumonia onset was significantly higher (all $p<0.0001$) for inpatient visits (1.2 vs. 0.29), ER visits (1.9 vs. 0.68), outpatient visits (34.97 vs. 23.1) and LOS (7.3 vs. 1.3 days) than the control cohort. Estimated one-year mean costs were higher in the pneumonia cohort with differences in: inpatient costs $14,353 (95% CI: $14,037, $14,690), outpatient costs $6,891 ($6,706, $7,075), prescription drug costs $1,104 ($1,054, $1,152) and total costs $23362 ($22,969, $23,787). **CONCLUSIONS:** Our study demonstrates elevated HCRU and costs in COPD patients after acquiring pneumonia.

PIN46

COST ANALYSIS OF ANTIBIOTICS UTILIZATION IN RESPIRATORY TRACT INFECTION USING PRESCRIBING INDICATORS

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OBJECTIVES: The cost of antibiotics is always an area of concern in treating RTI. The purpose of the current study was to determine the contribution of costs of antibiotics on the overall prescription costs in paediatric patients. **METHODS:** The study was carried out at a pediatric outpatient setting where data of 688 patients, below 18 years of age, was captured over a period of one year from the "Wise-kid" software. **RESULTS:** RTI was most common in the age group of 1-3 Y (32%) and 3-6 Y (30%). It affects the patients mostly in winter (35%) followed by autumn (25%). Antibiotic prescribed from NLEM-2011 were found to be 92%. All the antibiotics were prescribed by oral route with brand name only. Percentage of encounters with antibiotics in RTI, were highest in acute otitis media (AOM, 89%), followed by lower respiratory tract illness (LRTI, 76%), tonsillitis (71%), upper respiratory tract infection (URTI) + bronchospasm (17%), URTI (13%) and influenza like illness (ILI, 13%). The average cost of treatment was maximum for AOM (INR186±7; 1USD=approx INR55) followed by LRTI, ILI, URTI (181±11, 125±6 & 120±2, respectively in INR). While the average cost spent on antibiotic treatment was INR 82±8. Of total cost, 17% was spent on the utilization of antibiotics.The order for cost spent on use of different class of drug were cold & cough combinations (37%) > NSAIDs (9%) > nasal drops. The contribution of antiasthmatics, antihistamines & antibiotics was found to be 6% each. Among antibiotics, maximum cost were spent on the use of amoxicillin+clavulanic acid combination (66%) followed by the cost spent on the prescribing of azithromycin, cefpodoxime, clarithromycin, cephalexin & ofloxacin (24%, 4%, 4%, 1.5% & 1% respectively). **CONCLUSIONS:** The results indicate that less than 20% costs were spent on antibiotics for the treatment of RTI. These results build the evidence for the cost of treating RTI in children.

PIN47

HEALTH CARE RESOURCE UTILIZATION, COSTS, AND ADVERSE EVENTS IN THE OUTPATIENT TREATMENT OF ASPERGILLOSIS WITH VORICONAZOLE IN THE UNITED STATES

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OBJECTIVES: To evaluate the occurrence and associated health care utilization and costs of potential adverse events (AEs) associated with outpatient voriconazole use among patients with aspergillosis. **METHODS:** Commercially-insured adults aged ≥18 years with at least one medical claim with a diagnosis of aspergillosis (ICD-9-CM 117.3 or 484.6) between July 1, 2004-March 1, 2011 and outpatient voriconazole treatment on or after the index diagnosis were identified from the *MarketScan Research Databases*. Patients were required to have ≥6 months of pre-index and ≥1 month of post-index health plan and pharmacy benefit enrollment. Patients with an aspergillosis diagnosis in the pre-index period were excluded. Potential AEs, as indicated in the package insert for voriconazole, were identified via diagnosis codes and were evaluated for periods during active treatment plus 7 days. AE-related monitoring , such as organ function tests and visits with ophthalmologists, were also evaluated. Total all-cause costs and potential AE-related costs were calculated. **RESULTS:** A total of 1511 patients treated with voriconazole were identified. The most common conditions observed during active treatment with voriconazole plus 7 days were fever (15.1%), tachycardia (12.2%), acute kidney failure (8.9%), and nausea/vomiting (8.4%). AE-related inpatient admissions and outpatient physician office visits were observed for 19.9% and 40.8% of patients, respectively. Outpatient AE-related organ function testing, aspergillosis-related laboratory tests, including therapeutic drug monitoring, and at least one office visit with an ophthalmologist, was observed among 16.3%, 34.5%, 18.1% of patients, respectively. Average total, aspergillosis-related costs during follow-up of patients treated with voriconazole were $35,968 ± $68,590. Average total costs associated with adverse events and adverse event monitoring were $3,772 ± $30,057 or 10.5% of total average costs. **CONCLUSIONS:** Conditions suggestive of AEs associated with voriconazole occurred frequently, and were associated